

**REMARKS**

Upon entry of the instant Amendment, claims 14-20 and 31-49 will be pending in the application. Claims 14, 33 and 42 are amended. Support for the amendment to claims 14, 33 and 42 can be found in Fig. 3 and paragraph [0002] of the instant published application No. 2006/0071304. Reconsideration of the rejected claims in view of the following remarks is respectfully requested.

***Telephone Interview***

Applicant appreciates the courtesy extended by Examiner Nguyen in the Telephone Interview of November 10, 2008.

In the Interview, Applicant proposed possible amendments to the claims to place the application in condition for allowance, and indicated that the proposed amendments would be filed with an RCE.

The Examiner explained that the proposed amendments would appear to overcome the prior art rejections especially those based on MA, but that the proposed amendment would raise new issues requiring an RCE for consideration. Finally, the Examiner agreed to contact Applicant's representative upon receiving the Response to discuss the same with the aim of placing the application in condition for allowance.

Applicant also notes that while Applicant has amended claims 14, 33 and 42 in an effort to advance prosecution, Applicant is not conceding in this application that the previously presented claims are not patentable over the art cited by the Examiner. The present claim amendments are only for facilitating expeditious prosecution of possible allowable subject matter

and/or to obtain earlier allowance. Applicant respectfully reserves the right to pursue these and other claims in one or more continuation patent applications.

***35 U.S.C. § 112, 2<sup>nd</sup> Paragraph, Rejection***

Claims 14, 33 and 42 were rejected as indefinite for allegedly containing features which are not defined, which are unclear, and which lack proper antecedent basis.

The Examiner explains that the language “a known voltage” is indefinite. While Applicants believe that one having ordinary skill in the art would have no difficulty understanding this language as “a specified voltage”, Applicants have nevertheless amended claims 14, 33 and 42 to remove the term “known” in an effort to resolve this basis of rejection.

The Examiner asserts that the language “wherein the substrate contact one of” is indefinite. Applicants disagree. Such language is common patent parlance for defining alternative features which follow this language.

Finally, Applicants disagree that claim 46 recites a feature lacking in proper antecedent basis. The feature “silicide” in claim 46 is not preceded with the term “the” or “said”, and therefore cannot lack proper antecedent basis.

Accordingly, Applicants respectfully submit that the rejection of the above-noted claims is improper, and should be withdrawn.

***35 U.S.C. § 102(b) Rejections***

*Over Ma*

Claims 14-17, 32, 44 and 45 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 7,049,669 to MA et al. This rejection is respectfully traversed.

The Examiner asserted that this document discloses or suggests all the features recited in these claims including the recited substrate contact. Notwithstanding the Office Action assertions as to what MA discloses, Applicants submit that MA fails to disclose, or even suggest, for example, a bottom surface of the substrate contact being arranged over a portion of the semiconductor material of the substrate (claim 14).

Applicants do not dispute that MA apparently discloses a so-called substrate contact 36 adjacent the source 34 (see Fig. 3). However, MA shows the so-called substrate contact 36 extending to the metal layer 30 and explains at col. 4, lines 36-44 that the so-called substrate contact 36 "reaches from ... to the backside metal layer 30." Thus, no portion of the bottom side of the so-called contact 36 is arranged over a portion of the semiconductor material of the substrate 1. Furthermore, the Examiner has failed to identify any language in MA which discloses or suggests that little or no current flows through the substrate contact (claim 14).

The Examiner responds on page 4 of the Final Office Action that MA inherently discloses or suggests that little or no current flows through the substrate contact (claim 14). Applicants disagree. Such assertions of inherency are not consistent with MPEP 2112, which specifically states, in part:

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original) (Applicant's invention was directed to a biaxially oriented, flexible dilation catheter balloon (a tube which expands upon inflation) used, for example, in clearing the blood vessels of heart patients). The examiner applied a U.S. patent to Schjeldahl which disclosed injection molding a tubular preform and then injecting air into the preform to expand it against a mold (blow molding). The reference did not directly state that the end product balloon was biaxially oriented. It did disclose that the balloon was "formed from a thin flexible inelastic, high tensile strength, biaxially oriented synthetic plastic material." *Id.* at 1462 (emphasis in original). The examiner argued that Schjeldahl's balloon was inherently biaxially oriented. The Board reversed on the basis that the

examiner did not provide objective evidence or cogent technical reasoning to support the conclusion of inherency.).

Other than concluding inherency, the Examiner has provided no basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.

Moreover, Applicants submit that dependent claims 15-17, 32, 44 and 45 are allowable at least for the reason that these claims depend from allowable base claim 14, and because these claims recite additional features that further define the present invention.

Applicants request that the Examiner reconsider and withdraw the rejection of the above-noted claims under 35 U.S.C. § 102(b).

#### Over Chang

Claims 33-36 and 40-43 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,624,030 to CHANG et al. This rejection is respectfully traversed.

The Examiner asserted that this document discloses or suggests all the features recited in these claims including the recited substrate contact. Notwithstanding the Office Action assertions as to what CHANG discloses, Applicants submit that CHANG fails to disclose, or even suggest, for example, a bottom surface of the substrate contact being arranged over a portion of the semiconductor material of the substrate (claims 33 and 42).

Applicants do not dispute that CHANG discloses a guard ring 28 which abuts a side of the source/drain region 24 (see Fig. 4). However, CHANG specifically explains at col. 3, lines 14-17 that current flows from the electrode 32 to electrode 34. Thus, it is not apparent that CHANG can be read to disclose or suggest that the ring substrate contact helps to keep an active

region of the semiconductor device at a voltage potential and acts as a collection source for stray currents (claims 33 and 42).

The Examiner responds on page 7 of the Final Office Action that CHANG inherently discloses or suggests that the ring substrate contact helps to keep an active region of the semiconductor device at a voltage potential and acts as a collection source for stray currents (claims 33 and 42). Applicants disagree. Again, such assertions of inherency are not consistent with MPEP 2112, which specifically states, in part:

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original) (Applicant's invention was directed to a biaxially oriented, flexible dilation catheter balloon (a tube which expands upon inflation) used, for example, in clearing the blood vessels of heart patients). The examiner applied a U.S. patent to Schjeldahl which disclosed injection molding a tubular preform and then injecting air into the preform to expand it against a mold (blow molding). The reference did not directly state that the end product balloon was biaxially oriented. It did disclose that the balloon was "formed from a thin flexible inelastic, high tensile strength, biaxially oriented synthetic plastic material." *Id.* at 1462 (emphasis in original). The examiner argued that Schjeldahl's balloon was inherently biaxially oriented. The Board reversed on the basis that the examiner did not provide objective evidence or cogent technical reasoning to support the conclusion of inherency.).

Other than concluding inherency, the Examiner has provided no basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.

Moreover, Applicants submit that dependent claims 33-36 and 40-43 are allowable at least for the reason that these claims depend from allowable base claims 33 and 42, and because these claims recite additional features that further define the present invention.

Applicants request that the Examiner reconsider and withdraw the rejection of the above-noted claims under 35 U.S.C. § 102(b).

***35 U.S.C. § 103(a) Rejections***

***Over Ma with Rice***

Claims 18 and 19 were rejected under 35 U.S.C. § 103(a) as unpatentable over MA in view of U.S. Patent No. 4,738,936 to RICE. This rejection is respectfully traversed.

The Examiner acknowledged that MA lacks, among other features, the recited features of these dependent claims. However, the Examiner asserted that such features are disclosed in RICE, and that it would have been obvious to one of ordinary skill in the art to combine the teachings of these documents. Applicants respectfully disagree with the Examiner's assertions and traverses this rejection.

Notwithstanding the Office Action assertions as to each of MA and RICE discloses or suggests, Applicants submit that neither MA and RICE discloses, or even suggests, for example, that the substrate contact or ring substrate contact abuts a side of the source or is arranged adjacent to a side of the source without an intervening shallow trench isolation structure in combination with a bottom surface of the substrate contact being arranged over a portion of the semiconductor material of the substrate (claim 14).

As explained above, Applicants do not dispute that MA apparently discloses a so-called substrate contact 36 adjacent the source 34 (see Fig. 3). However, MA shows the so-called substrate contact 36 extending to the metal layer 30 and explains at col. 4, lines 36-44 that the so-called contact 36 "reaches from ... to the backside metal layer 30." Thus, no portion of the bottom side of the so-called substrate contact 36 is arranged over a portion of the semiconductor

material of the substrate 1. Furthermore, the Examiner has failed to identify any language in MA which discloses or suggests that little or no current flows through the substrate contact (claim 14).

RICE does not cure the deficiencies of MA. Applicants do not dispute that RICE discloses an FET with a source contact (see title). However, in RICE the gate 74 is not arranged between the source 60 and the drain 76 are required by claims 14 and 33 (see Fig. 1H). Furthermore, the Examiner has failed to identify any language in RICE which discloses or suggests that little or no current flows through the substrate contact (claim 14).

Applicants submit that there is no reason to modify MA and RICE in a manner which would render obvious Applicants' invention, and additionally, Applicants submit that there is no rationale disclosed or suggested in the prior art to modify the applied reference in the manner suggested by the Examiner. The Examiner's opinion does not provide a proper basis for these features or for the motivation to modify this document in the manner suggested by the Examiner. There must be some suggestion or basis in the art for such a modification, which Applicant submits is lacking. Therefore, Applicants submit that the invention as recited in at least independent claim 14 is not rendered obvious by any reasonable inspection and interpretation of the disclosure of the applied references.

Finally, Applicants submit that dependent claims 18 and 19 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicants submit that no proper combination of MA and RICE discloses or even suggests, in combination, the features recited in claims 18 and 19 in combination with the features recited in claim 14.

Applicant requests that the Examiner reconsider and withdraw the rejection of the above-noted claims under 35 U.S.C. § 103(a).

Over Ma with Herzum

Claims 20, 46 and 47 were rejected under 35 U.S.C. § 103(a) as being unpatentable over MA in view of U.S. Patent Application Publication No. 2004/0238871 to HERZUM et al. This rejection is respectfully traversed.

The Examiner acknowledged that MA lacks, among other features, the recited features of these dependent claims. However, the Examiner asserted that such features are disclosed in HERZUM, and that it would have been obvious to one of ordinary skill in the art to combine the teachings of these documents. Applicants respectfully disagree with the Examiner's assertions and traverse this rejection.

Notwithstanding the Office Action assertions as to each of MA and HERZUM discloses or suggests, Applicants submit that neither MA and HERZUM discloses, or even suggests, for example, that the substrate contact or ring substrate contact abuts a side of the source or is arranged adjacent to a side of the source without an intervening shallow trench isolation structure in combination with a bottom surface of the substrate contact being arranged over a portion of the semiconductor material of the substrate (claim 14).

As explained above, Applicants do not dispute that MA apparently discloses a so-called substrate contact 36 adjacent the source 34 (see Fig. 3). However, MA shows the so-called substrate contact 36 extending to the metal layer 30 and explains at col. 4, lines 36-44 that the so-called contact 36 "reaches from ... to the backside metal layer 30." Thus, no portion of the bottom side of the so-called contact 36 is arranged over a portion of the semiconductor material



of the substrate 1 as required by claims 14 and 33. Furthermore, the Examiner has failed to identify any language in MA which discloses or suggests that little or no current flows through the substrate contact (claim 14).

HERZUM does not cure the deficiencies of MA. Applicants do not dispute that HERZUM discloses that the substrate contact 12 is in electrical contact with the source 14 (see paragraph [0036]). However, HERZUM explains at paragraph [0036] that the current flows from the source to the contact 12. Thus, HERZUM cannot be read to disclose or suggest that little or no current flows through the substrate contact (claim 14).

Furthermore, claim 14 additionally recites that the substrate contact helps to keep an active region of the semiconductor device at a voltage potential and acts as a collection source for stray currents. Such features also appear to be lacking in MA and HERZUM.

Applicants submit that there is no reason to modify MA and HERZUM in a manner which would render obvious Applicants' invention, and additionally, Applicants submit that there is no rationale disclosed or suggested in the prior art to modify the applied reference in the manner suggested by the Examiner. The Examiner's opinion does not provide a proper basis for these features or for the motivation to modify this document in the manner suggested by the Examiner. Therefore, Applicants submit that the invention as recited in at least independent claim 14 is not rendered obvious by any reasonable inspection and interpretation of the disclosure of the applied references.

Finally, Applicants submit that dependent claims 20, 46 and 47 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicants submit that

no proper combination of MA and HERZUM discloses or even suggests, in combination, the features recited in claims 20, 46 and 47 in combination with the features recited in claim 14.

Applicant requests that the Examiner reconsider and withdraw the rejection of the above-noted claims under 35 U.S.C. § 103(a).

Over Ma with Chang

Claim 31 was rejected under 35 U.S.C. § 103(a) as being unpatentable over MA in view of CHANG. This rejection is traversed.

The Examiner acknowledged that MA lacks, among other features, the recited features of this dependent claim. However, the Examiner asserted that such features are disclosed in CHANG, and that it would have been obvious to one of ordinary skill in the art to combine the teachings of these documents. Applicants respectfully disagree with the Examiner's assertions and traverse this rejection.

Notwithstanding the Office Action assertions as to each of MA and CHANG discloses or suggests, Applicants submit that neither MA and CHANG discloses, or even suggests, for example, that the substrate contact or ring substrate contact abuts a side of the source or is arranged adjacent to a side of the source without an intervening shallow trench isolation structure in combination with a bottom surface of the substrate contact being arranged over a portion of the semiconductor material of the substrate (claim 14).

As explained above, Applicants do not dispute that MA apparently discloses a so-called substrate contact 36 adjacent the source 34 (see Fig. 3). However, MA shows the so-called substrate contact 36 extending to the metal layer 30 and explains at col. 4, lines 36-44 that the so-called contact 36 "reaches from ... to the backside metal layer 30." Thus, no portion of the

bottom side of the so-called substrate contact 36 is arranged over a portion of the semiconductor material of the substrate 1 as required by claims 14 and 33. Furthermore, the Examiner has failed to identify any language in MA which discloses or suggests that little or no current flows through the substrate contact (claim 14).

CHANG does not cure the deficiencies of MA. Applicants do not dispute that CHANG discloses that a guard ring 28. However, CHANG explains at col. 3, lines 14-17 that the current flows from the electrode 32 to electrode 34. Thus, it is not apparent that CHANG can be read to disclose or suggest that little or no current flows through the substrate contact (claim 14).

Furthermore, claim 14 additionally recites that the substrate contact helps to keep an active region of the semiconductor device at a voltage potential and acts as a collection source for stray currents. Such features also appear to be lacking in MA and CHANG.

Applicants submit that there is no apparent reason to modify MA and CHANG in a manner which would render obvious Applicants' invention, and additionally, Applicants submit that there is no rationale disclosed or suggested in the prior art to modify the applied reference in the manner suggested by the Examiner. The Examiner's opinion does not provide a proper basis for these features or for the motivation to modify this document in the manner suggested by the Examiner. Therefore, Applicants submit that the invention as recited in at least independent claim 14 is not rendered obvious by any reasonable inspection and interpretation of the disclosure of the applied references.

Finally, Applicants submit that dependent claim 31 is allowable at least for the reason that this claim depends from allowable base claim 14 and because this claim recites additional features that further define the present invention. In particular, Applicants submit that no proper

combination of MA and CHANG discloses or even suggests, in combination, the features recited in claim 31 in combination with the features recited in claim 14.

Applicant requests that the Examiner reconsider and withdraw the rejection of the above-noted claims under 35 U.S.C. § 103(a).

Over Chang with Rice

Claims 37 and 38 were rejected under 35 U.S.C. § 103(a) as unpatentable over CHANG in view of RICE. This rejection is respectfully traversed.

The Examiner acknowledged that MA lacks, among other features, the recited features of these dependent claims. However, the Examiner asserted that such features are disclosed in RICE, and that it would have been obvious to one of ordinary skill in the art to combine the teachings of these documents. Applicants respectfully disagree with the Examiner's assertions and traverses this rejection.

Notwithstanding the Office Action assertions as to each of CHANG and RICE discloses or suggests, Applicants submit that neither CHANG and RICE discloses, or even suggests, for example, that the substrate contact or ring substrate contact abuts a side of the source or is arranged adjacent to a side of the source without an intervening shallow trench isolation structure in combination with a bottom surface of the substrate contact being arranged over a portion of the semiconductor material of the semiconductor material of the substrate (claims 14 and 33).

As explained above, Applicants do not dispute that MA apparently discloses a so-called substrate contact 36 adjacent the source 34 (see Fig. 3). However, MA shows the so-called substrate contact 36 extending to the metal layer 30 and explains at col. 4, lines 36-44 that the so-called contact 36 "reaches from ... to the backside metal layer 30." Thus, no portion of the

bottom side of the so-called substrate contact 36 is arranged over a portion of the semiconductor material of the semiconductor material of the substrate 1. Furthermore, the Examiner has failed to identify any language in MA which discloses or suggests that the ring substrate contact helps to keep an active region of the semiconductor device at a voltage potential and acts as a collection source for stray currents (claim 33).

RICE does not cure the deficiencies of CHANG. Applicants do not dispute that RICE discloses an FET with a source contact (see title). However, in RICE the gate 74 is not arranged between the source 60 and the drain 76 are required by claims 14 and 33 (see Fig. 1H). Furthermore, the Examiner has failed to identify any language in RICE which discloses or suggests that the ring substrate contact helps to keep an active region of the semiconductor device at a voltage potential and acts as a collection source for stray currents (claim 33).

Applicants submit that there is no apparent reason to modify CHANG and RICE in a manner which would render obvious Applicants' invention, and additionally, Applicants submit that there is no rationale disclosed or suggested in the prior art to modify the applied reference in the manner suggested by the Examiner. The Examiner's opinion does not provide a proper basis for these features or for the motivation to modify this document in the manner suggested by the Examiner. There must be some suggestion or basis in the art for such a modification, which Applicant submits is lacking. Therefore, Applicants submit that the invention as recited in at least independent claim 33 is not rendered obvious by any reasonable inspection and interpretation of the disclosure of the applied references.

Finally, Applicants submit that dependent claims 37 and 38 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicants submit that

no proper combination of CHANG and RICE discloses or even suggests, in combination, the features recited in claims 37 and 38 in combination with the features recited in claim 33.

Applicant requests that the Examiner reconsider and withdraw the rejection of the above-noted claims under 35 U.S.C. § 103(a).

Over Chang with Herzum

Claims 39, 48 and 49 were rejected under 35 U.S.C. § 103(a) as being unpatentable over CHANG in view of HERZUM. This rejection is respectfully traversed.

The Examiner acknowledged that CHANG lacks, among other features, the recited features of these dependent claims. However, the Examiner asserted that such features are disclosed in HERZUM, and that it would have been obvious to one of ordinary skill in the art to combine the teachings of these documents. Applicants respectfully disagree with the Examiner's assertions and traverse this rejection.

Notwithstanding the Office Action assertions as to each of CHANG and HERZUM discloses or suggests, Applicants submit that neither CHANG and HERZUM discloses, or even suggests, for example, a bottom surface of the substrate contact being arranged over a portion of the semiconductor material of the substrate (claims 33 and 42).

As explained above, Applicants do not dispute that CHANG discloses a guard ring 28 which abuts a side of the source/drain region 24 (see Fig. 4). However, CHANG specifically explains at col. 3, lines 14-17 that current flows from the electrode 32 to electrode 34. Thus, it is not apparent that CHANG can be read to disclose or suggest that the ring substrate contact helps to keep an active region of the semiconductor device at a voltage potential and acts as a collection source for stray currents (claims 33 and 42).

HERZUM does not cure the deficiencies of CHANG. Applicants do not dispute that HERZUM discloses that the substrate contact 12 is in electrical contact with the source 14 (see paragraph [0036]). However, HERZUM explains at paragraph [0036] that the current flows from the source to the contact 12. Thus, it is not apparent that HERZUM can be read to disclose or suggest that the ring substrate contact helps to keep an active region of the semiconductor device at a voltage potential and acts as a collection source for stray currents (claims 33 and 42).

Applicants submit that there is no reason to modify CHANG and HERZUM in a manner which would render obvious Applicants' invention, and additionally, Applicants submit that there is no rationale disclosed or suggested in the prior art to modify the applied reference in the manner suggested by the Examiner. The Examiner's opinion does not provide a proper basis for these features or for the motivation to modify this document in the manner suggested by the Examiner. Therefore, Applicants submit that the invention as recited in at least independent claims 33 and 42 is not rendered obvious by any reasonable inspection and interpretation of the disclosure of the applied references.

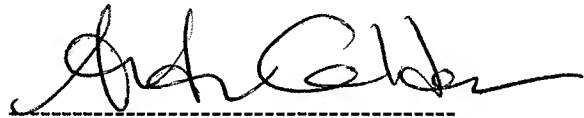
Finally, Applicants submit that dependent claims 39, 48 and 49 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicants submit that no proper combination of CHANG and HERZUM discloses or even suggests, in combination, the features recited in claims 39, 48 and 49 in combination with the features recited in claims 33 and 42.

Applicant requests that the Examiner reconsider and withdraw the rejection of the above-noted claims under 35 U.S.C. § 103(a).

### CONCLUSION

In view of the foregoing amendments and remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Deposit Account No. 09-0458.

Respectfully submitted,  
Basant JAGANNATHAN, *et al.*

A handwritten signature in black ink, appearing to read "Andrew M. Calderon", is written over a horizontal dashed line.

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